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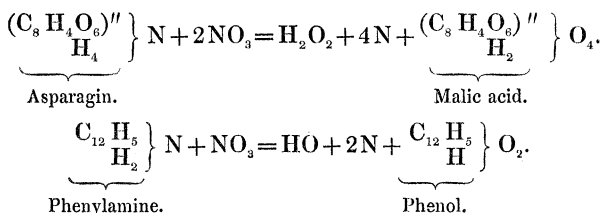
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V. "On New Nitrogenous Derivatives of the Phenyl- and Benzoyl-Series." By P. GRIESS, Esq. Communicated by Dr. Hofmann. Received December 9, 1858.

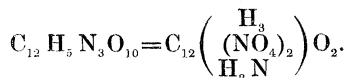
Piria's important discovery that the action of nitrous acid upon asparagin gives rise to the formation of malic acid, has led to a very general application of this agent in the study of nitrogenous substances. The results obtained have been almost always analogous to those produced by Piria; the reaction may be illustrated by the following examples:—



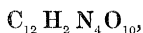
The plan hitherto adopted consisted in submitting the *aqueous* solution of the nitrogenous body directly to the action of nitrous acid, or in dissolving the body in nitric acid, and passing into the solution a current of binoxide of nitrogen. By employing *alcoholic* and *etheral* solutions, I have arrived at different results, establishing a *new mode of reaction*; of the facts which I have observed the following may be quoted as illustrations.

Action of Nitrous Acid on Picramic Acid. Diazodinitrophenol.

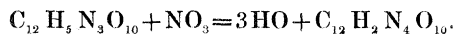
On passing a current of nitrous acid into an alcoholic solution of picramic acid—



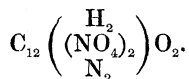
the red liquid assumes at once a yellow colour, and furnishes rapidly a copious deposit of yellow crystals. *No gas is evolved during the reaction.* The yellow crystals, purified by recrystallization from alcohol, are found to contain



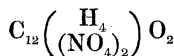
and are obviously formed according to the equation—



The new body, for which I propose the provisional name *diazodinitrophenol*, is soluble in alcohol and ether, and crystallizes from the former solvent in magnificent golden-yellow plates, which detonate on heating. Acids have no action upon this substance; on ebullition with water it appears to undergo decomposition; alkalis induce at once a copious evolution of gas, and give rise to the formation of dinitrophenol. This metamorphosis appears to indicate that the new body still belongs directly to the phenol-group; the constitution of diazodinitrophenol may perhaps be best understood by representing it by the formula



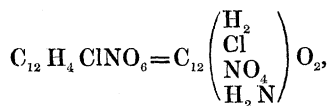
The transformation of this compound into



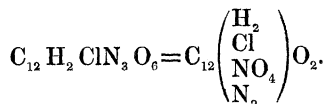
involves the decomposition of 2 equivs. of water, the oxygen of which appears to be consumed in the formation of secondary products of decomposition. No trace of oxygen, either free or combined, could be found among the gaseous products; the gas evolved consisting, according to a minute examination, of perfectly pure nitrogen.

Diazonitrochlorphenol.

Treatment in a similar manner of *amidonitrochlorphenol*

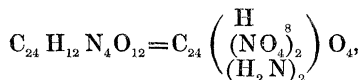


a new mixed derivative of phenol, as might have been expected, has furnished perfectly similar results. The new compound thus obtained crystallizes in beautiful brown-red needles, of physical and chemical properties similar to those of the preceding compound. It contains

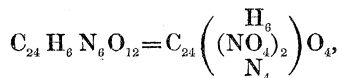


Diazonitrophenol.

This substance is formed by submitting the ethereal solution of *diphenamic acid*



discovered by Gerhardt and Laurent, to the action of nitrous acid. It is a yellow crystalline, very unstable compound, containing



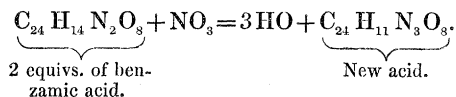
it explodes with extreme violence at the temperature of boiling water. The alkalis decompose it instantaneously with evolution of nitrogen and formation of products which are not yet analysed.

Action of Nitrous Acid upon Benzamic Acid.

The product obtained in a similar manner from *benzamic acid* is an orange-yellow crystalline precipitate, which constitutes a dibasic acid of the formula



Its formation is illustrated by the following equation



This acid is insoluble in water, alcohol, and ether. It is dissolved without decomposition by the alkalis in the cold, giving rise to the formation of soluble crystalline salts, which produce precipitates with nitrate of silver and acetate of lead.

All these salts are decomposed on heating, with evolution of nitrogen gas. The action of fuming nitric acid upon the dibasic derivative of benzamic acid produces a new acid, furnishing with barium a splendid yellow crystalline salt. The dibasic acid is likewise decomposed by hydrochloric acid; in combination with this acid remains a body which can be sublimed in white crystals.

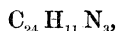
An alcoholic solution of benzamic ether when treated with nitrous acid yields the ether of the acid previously described.

The action of nitrous acid on alcoholic solutions of cuminic acid and

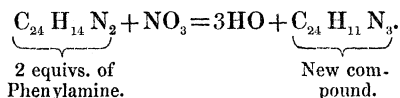
anisamic acids has likewise furnished new bodies, with the study of which I am at present engaged.

Action of Nitrous Acid on Phenylamine and Nitrophenylamine.

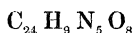
Phenylamine, when submitted to the modified nitrous acid-process, is transformed into a fusible body containing



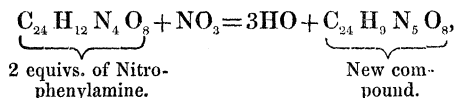
which is insoluble in water and easily soluble in alcohol. This compound, which possesses feebly basic characters, is formed according to the equation



Nitrophenylamine (the alpha-variety which is formed by the action of reducing agents upon dinitrobenzol), similarly treated, furnishes a compound crystallizing in beautifully red needles



the formation of which is represented by the equation



Treated with concentrated hydrochloric acid, the new compound reproduces nitrophenylamine. The action of chlorine and bromine upon it gives rise to the formation of new crystallized derivatives.

VI. "On the Influence of the Ocean on the Plumb-line in India." By the Rev. J. H. PRATT, Archdeacon of Calcutta. Communicated by Professor STOKES, Sec. R.S.
Received December 7, 1858.

(Abstract.)

This paper is a sequel to two former communications made to the Royal Society by the author. In the first of these (communicated in 1855), the deflection of the plumb-line caused by the mountain-mass north of Hindostan is calculated; and in the second (communicated in 1858), the effect of a small excess or defect of density pre-